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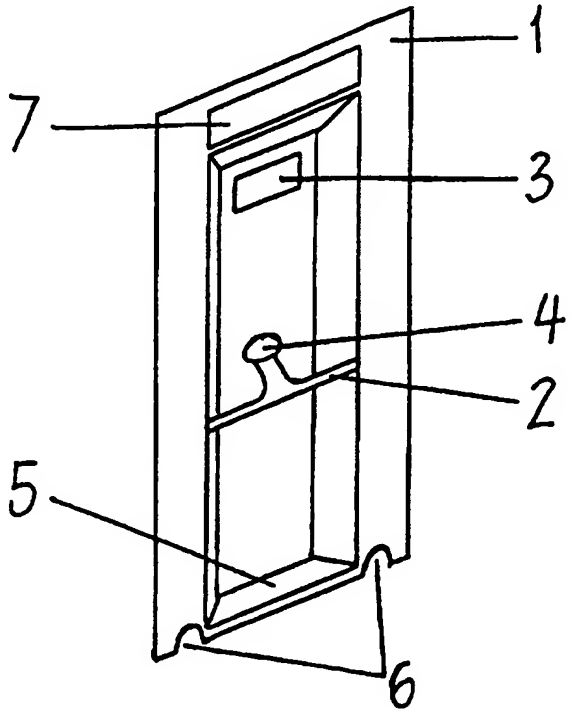
(54) Title: COMBINED FIREDRAUGHT BARRIER, FIRE SHIELD AND FIRE HOSE BASE

(57) Abstract

The combined firedraught barrier, fire shield and fire hose base comprises an easy-to-handle, portable formed plate (1) having a crossbar (2), a window (3), centre openings (4) for nozzles, and openings (6) at floor level for fire hoses, for fire-fighting from door and window openings and for stopping the inflow of oxygen. The plate serves as a fire shield, firedraught barrier and fire hose base, and also be as a door for smoke divers. At the top of the plate one or more smoke valves are provided for ventilation to allow the heat of the fire to escape. The fireman can stand behind the plate with one foot on the footboard (5) and hold the plate against the door frame to stop the firedraught/inflow of oxygen. At the same time, the fireman can fight the fire by using a nozzle through the centre opening (4). A window (3) in the plate may provide some visibility. Openings (6) in the plate at floor level are intended for fire hoses which may pulled along the floor into the interior of e.g., a building, by smoke divers.



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COMBINED FIREDRAUGHT BARRIER, FIRE SHIELD AND FIRE HOSE BASE

Description

The present invention relates to a combined firedraught barrier, fire shield and fire hose base, which firemen can easily carry to the scene of a fire, and use both as a fire shield and fire-fighting equipment in extinguishing the fire. The invention can be used for both doors and windows. The background for the term "firedraught barrier" is that in a house fire the inflow of oxygen takes place at floor level through, e.g., an open door, and the intention is to prevent this inflow of oxygen.

Experience has shown that all too often fires, which were about to die out due to oxygen starvation, have flared up and caused a great deal of unnecessary damage after firefighters have started to extinguish the fire through open doors. The inflow of oxygen (firedraught) has been able to flow freely to the fire. There are numerous examples of houses totally destroyed by fire, even though there was no sign of flames when fire-fighting commenced. The inflow of oxygen has then caused the fire to blaze up.

A type of gas-lock in the form of a tent designed to be placed in front of doors has previously been proposed in NO Application 924375, but this has not become a marketable product.

When using the firedraught barrier, it is possible to open a door without causing a fire on the inside of the door, which is giving off only or mostly smoke and fumes, to burst into flames by placing the firedraught barrier in the door opening and against the door frame as soon as the door is opened. The invention will prevent the inflow of oxygen and will also function well as a portable fire shield and fire hose base.

At the bottom of the invention there are openings for fire hoses which can be pulled along the floor into the building. There is also an opening in the centre of the invention through which the nozzle of a fire hose can be projected. The nozzle can be placed on a support extending from the centre opening to a crossbar for handling the invention, so that the user can save energy whilst handling the fire hose.

The fact that the invention is curved inwards at the centre allows it to be suitably positioned in door opening for fire-fighting. The invention can be held in place by the pressure of the user's foot on a footboard at the bottom of the invention. Pressure from the weight of the fire hose on the crossbar will also help to hold the invention against the door frame.

The invention can be manoeuvred and controlled by handling a crossbar, if, for example, a smoke diver is to enter the building or room. The smoke diver can then squeeze in and out on one side or the other with a minimum opening. The smoke diver can pull a fire hose in through one of the openings at floor level, so that unnecessary inflow of oxygen is prevented. Depending upon visibility, the operator of the invention can observe the fire through a window located above the centre opening.

A fire inside a building will create a great deal of smoke and fumes and an elevated inside air pressure. To release the heat of the fire, there is a single hanging smoke valve at the top of the invention. The smoke valve will remain open as long as the air pressure inside is higher than outside. The smoke valve will gradually close to prevent inflow of oxygen.

Some form of ventilation equipment may conceivably be coupled to the smoke valve to permit greater control of the smoke if it is desirable to lead the smoke and fumes to a location other than just outside the door.

In real life it is not difficult to observe the inflow of oxygen through the lower part of e.g., a door, and the outflow of hot smoke from inside through the upper part.
Firemen have used this phenomenon to inject fog at floor level, but the drawback is that the inflow of oxygen sustains the fire. The invention will make it possible to stand in a door opening, protected against heat radiation, whilst using fire hoses to fight the fire. At the same time, the firemen will also have control of the inflow of oxygen, which is something they do not have today.

The novelty of the invention resides in the absence of a tight-fitting solution for doors and windows, and the combination of firedraught barrier, safety equipment and fire hose base.

The invention can be made of several types of material, but is preferably made of a suitable lightweight material that is easy to handle and can stand 1000 - 1300 degrees Celsius, and which is functional.

The combined firedraught barrier, fire shield and fire hose base according to the invention is illustrated in the drawings.
Fig. 1 is a side view from above of the inside of the invention. The openings (6) should preferably have easy-to-handle, closeable flaps or the like. The centre opening (4) has a support (8) for nozzles extending from the opening (4) to a crossbar (2). On the edge of

the support it is preferable to have a stopper for the nozzle. When in use, the nozzle must be capable of being pointed forward in any direction.

Fig. 2 is a side view of the firedraught barrier set up for use in a door opening, and where it is possible to see a fire hose and an open smoke valve (7) for ventilation to allow the escape of the smoke flow.

Fig. 3 is a view of the rear of the window version, wherein there are two openings for nozzles. This version can be nailed in place in front of a window to prevent inflow of oxygen.

Fig. 4 is a view of the firedraught barrier set up for use in a door opening, and where it is possible to see the ventilation equipment, consisting of a couplingbox (9) in connection with a smoke hose / pipe (10), to lead the smoke and fumes to a loation other than just outside the door.

The description and drawings are to be understood thus that the disclosed embodiments are merely exemplary of the invention, which may be embodied in various forms. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the claims.

PATENT CLAIMS

1.

A portable, combined firedraught barrier, fire shield and fire hose base for fire-fighting. The door version is characterised in that an easy-to-handle, portable formed plate (1) having a crossbar (2), a window (3), one or more openings (4) for nozzles, openings (6) at the bottom for fire hoses, a footboard (5) and one or more smoke valves (7) for ventilation, is used as a fire shield and a fire hose base to prevent the inflow of oxygen through, e.g., a door opening.
The window version does not have the footboard (5).
The novelty of the invention resides in the combination of firedraught barrier, safety equipment and fire hose base.

2.

The invention according to claim 1, characterised in that the formed plate (1) is curved inwards in the case of the door version.

3.

The invention according to claim 1, characterised in that the openings (6) for fire hoses are easily closeable.

AMENDED CLAIMS

[received by the International Bureau on 14 January 1998 (14.01.98); original claim 1 amended; new claim 4 added; remaining claims unchanged (1 page)]

1.
A portable, combined firedraught barrier, fire shield and fire hose base for fire-fighting. The door version is characterised in that an easy-to-handle, portable formed plate (1) having a crossbar (2), a window (3), one or more openings (4) for nozzles, openings (6) at the bottom for fire hoses, a footboard (5) and one or more smoke valves (7) for ventilation, a support (8) for nozzles extending from the centre opening (4) to a crossbar (2) ,is used as a fire shield and a fire hose base to prevent the inflow of oxygen through, e.g., a door opening.

2.
The invention according to claim 1, characterised in that the formed plate (1) is curved inwards in the case of the door version.

3.
The invention according to claim 1, characterised in that the openings (6) for fire hoses are easily closeable.

4.
The invention according to claim 1, have one or more smoke valves (7) with a coupling for ventilation equipment. This ventilation equipment consist of a couplingbox (9) in connection with a smoke hose / pipe (10), to lead the smoke and fumes to a location other than just outside the door.

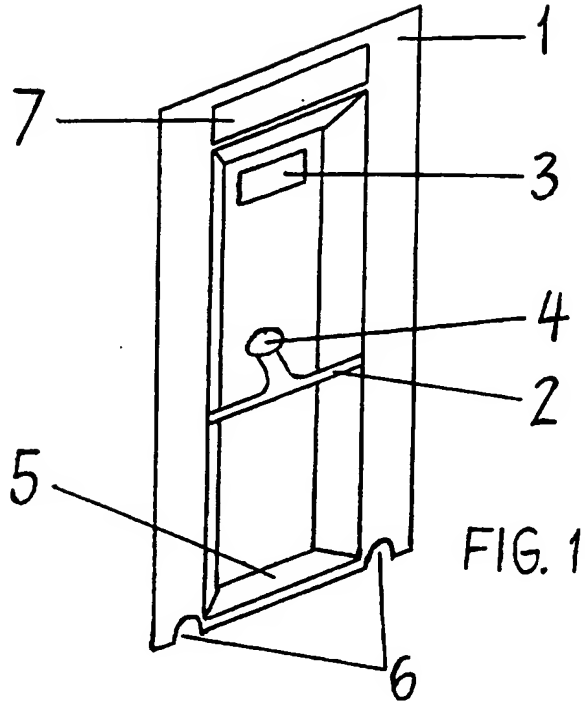

FIG. 1

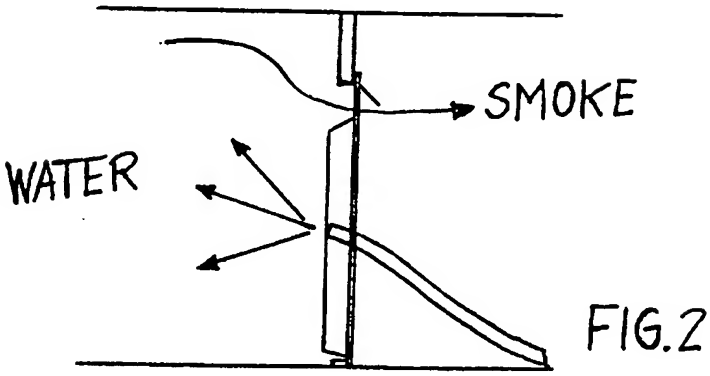

FIG.2

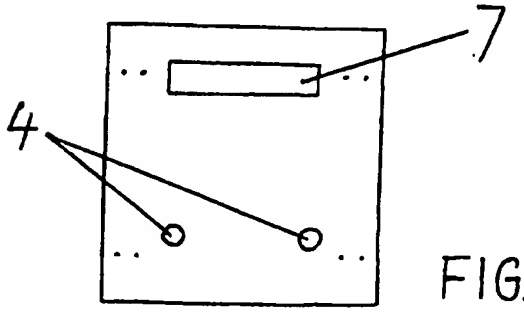

FIG.3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NO 97/00234

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: A62B 3/00, A62C 8/08, E06B 5/16
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: E06B, A62C, A62B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 336785 A (H. BURROWS ET AL), 23 October 1930 (23.10.30)	1-3
X	FR 44946 E (A. PUJES), 1 May 1935 (01.05.35)	1-3
A	CH 243740 C (ALUMINIUMWERKE AG), 16 January 1947 (16.01.47)	1-3
A	CH 281604 C (WALO, HOERNING), 1 July 1952 (01.07.52)	1-3

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
5 December 1997	08 -12- 1997
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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 3413182 A1 (LENHARD, LEO), 7 November 1985 (07.11.85) --	1-3
A	DE 3446551 A1 (LENHARD, LEO), 3 July 1986 (03.07.86) --	1-3

INTERNATIONAL SEARCH REPORT

Information on patent family members

04/11/97

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 336785 A	23/10/30	NONE	
FR 44946 E	01/05/35	NONE	
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CH 281604 C	01/07/52	NONE	
DE 3413182 A1	07/11/85	DE 3446551 A	03/07/86
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